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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/829,114	04/20/2004	Jason C. Smoke	H0006796-3018	6490

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Honeywell International, Inc.  
Law Dept. AB2  
P.O. Box 2245  
Morristown, NJ 07962-9806

EXAMINER

HANAN, DEVIN J

ART UNIT	PAPER NUMBER
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3745

DATE MAILED: 02/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/829,114

Applicant(s)

SMOKE ET AL.

Examiner

Devin Hanan

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 22 December 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-30 and 32 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 25-28 is/are allowed.
- 6) ☒ Claim(s) 1-24, 29 and 30 is/are rejected.
- 7) ☒ Claim(s) 32 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date. _____  | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Response to Arguments***

Applicant's arguments filed 12/22/2005 have been fully considered but they are not persuasive. The Masutani reference shows scroll vanes integrally formed with the scroll shaped outer wall that are capable of supporting the scroll housing in a manner that would maintain equal stress on each scroll vane (see figure 1, vane 16A is not integral, but vane 16B is integral with the scroll housing).

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –  
(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3, 6-10, 21 and 29 are rejected under 35 U.S.C. 102(b) as being anticipated by Masutani (U.S. Patent 6,607,353).

Masutani discloses a scroll housing (figure 1) for use in conjunction with a fluid compressor with an inlet adapted to receive a flow of fluid (axial inlet to impeller 12),

a scroll shaped outer wall (13),

a forward flange (extends from scroll 13 and passes next to the blade of impeller 12) and an aft flange (right side of figure 1 extending from scroll 13 to shaft 15) formed on said scroll shaped outer wall,

an outlet (passage into scroll 13); and

a plurality of scroll vanes (figure 1, 16B) integrally formed with said scroll shaped outer wall and said aft flanges, and said plurality of scroll vanes connecting said forward and aft flanges, said plurality of scroll vanes adapted for guiding the flow of fluid from said inlet to said outlet while supporting said scroll housing and configured such that an equal stress is maintained on each scroll vane when a load is applied to the scroll shaped outer wall (vanes 16B are integrally formed and capable of supporting the scroll housing with equal stress in each scroll vane).

Regarding claim 2, Masutani discloses the plurality of scroll vanes has a leading edge and a trailing edge, said leading edge (edge of 16b close to 16A) and said trailing edge (edge of 16B closer to scroll 13) are separated by a chord length, wherein said chord length enables at least one of said plurality of scroll vanes to carry a load upon said scroll housing adjacent each of said plurality of scroll vanes.

Regarding claim 3, Masutani discloses the plurality of scroll vanes has a cross sectional area, wherein said cross sectional area carries a load upon said scroll housing adjacent each of said plurality of scroll vanes (cross section of 16B figure 2).

Regarding claim 6, Masutani discloses the scroll housing where the fluid is air (col. 1 lines 13-16).

Regarding claim 7, Masutani discloses all of the claimed limitations as discussed in claim 1 above, an impeller (12), and scroll vanes adapted to guide fluid from the inlet to outlet (16B guides).

Regarding claim 8, Masutani discloses all of the claimed limitations as discussed in claim 7 above.

Regarding claim 9, Masutani discloses all of the claimed limitations as discussed in claim 7 above and

Regarding claim 10, Masutani discloses all of the claimed limitations as discussed in claim 9 above and a diffuser (16A).

Regarding claim 21, Masutani discloses all of the claimed limitations as discussed in claim 2 above.

Regarding claim 29, Masutani discloses all of the claimed limitations as discussed in claim 1 above.

Claims 5 and 30 are rejected under 102(b) as anticipated by Masutani.

Masutani discloses each and every structural element of the compressor scroll and vanes in claim 1 (with regards to claim 30 the elements are disclosed in the rejection of claim 29).

Masutani teaches that the compressor comprises a scroll vanes integral with the scroll, but is silent as to the method of manufacturing. The claimed phrase "wherein said scroll housing is cast titanium" is being treated as a product by process limitation; that is, that the scroll vanes are made by investment casting titanium. As set forth in MPEP 2113, product by process claims are NOT limited to the manipulations of the recited steps, only to the structure implied by the steps (Claim 30 is a method of operation so the reference to a cast housing is not given the additional weight it would

have if the method claim was a method of making). Once a product appearing to be substantially the same or similar is found, a 35 USC 102 rejection may be made and the burden is shifted to applicant to show an unobvious difference. See MPEP 2113.

Thus, even though Masutani is silent as to the process used to mold the scroll and vanes, it appears that the product in Masutani would be the same or similar as that claimed; especially since both applicant's product and the prior art product are made with fixed scroll vanes.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4, 11, 12, 18, 23 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Masutani.

Masutani discloses all the limitations in claims 1, 7, 21 above, but does not disclose the vanes carry 70%-100% or 98% to 100% of the load.

Regarding claims 4, 11, 12, and 24, since the applicant has not disclosed that having vanes carrying 70%-100% or 98% to 100% of the load solves any stated problem or is for any particular purpose above the fact that the values represent a design choice and it appears that the load carrying capabilities of the scroll vanes of Masutani would perform equally well with structural support as claimed by applicant, it

would have been an obvious matter of design choice to further modify Masutani by the applicant to have the vanes carry 70% to 100% or 98% to 100% of the load as claimed for the purposes of supporting the scroll housing.

Regarding claim 18 and 23, since the applicant has not disclosed that having vanes having a cross section determined by the load solves any stated problem or is for any particular purpose above the fact that the values represent a design choice and it appears that the load carrying capabilities of the scroll vanes of Masutani would perform equally well with structural support as claimed by applicant, it would have been an obvious matter of design choice to further modify Masutani by the applicant to have the vanes cross section determined by the load as claimed for the purposes of supporting the scroll housing.

Claims 9, 14-15 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Masutani in view of the applicants' admitted prior art (figure 1).

Masutani discloses all the limitations in claim 8 above, but does not disclose the forward and aft flanges each include a flat machined surface.

However, the applicants' admitted prior art discloses forward and aft flanges with flat machined surfaces (at the points where the bolts connect flanges 104 and 106) for the purpose of creating seal when joined by a bolt.

Since both Masutani and applicant's admitted prior art are centrifugal compressors capable of supporting a load, the applicants' admitted prior art would be in the pertinent prior art of Masutani. It would have been obvious to one of ordinary skill in

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the art at the time the invention was made to use the flanges of the applicants' admitted prior art for the purpose of creating a seal when joined by a bolt.

Regarding claim 14, Masutani discloses all of the claimed limitations as discussed in claim 7 above, but does not disclose a forward engine housing and an aft engine housing.

However, the applicants' admitted prior art (figure 2) discloses forward and aft engine housing (housing connected by bolts to flanges 104 and 106) for the purpose of transferring a load across the compressor scroll (applicants' specification page 6 lines 2-8).

Since both Masutani and applicant's admitted prior art are centrifugal compressors capable of supporting a load, the applicants' admitted prior art would be in the pertinent prior art of Masutani. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the flanges of the applicants' admitted prior art for the purpose of transferring the load across the compressor scroll.

Regarding claim 15, the modified apparatus of Masutani discloses all of the claimed limitations as discussed in claim 14 above including a cross sectional area capable of carrying load (Masutani figure 2).

Regarding claim 17, the modified apparatus of Masutani discloses all of the claimed limitations as discussed in claim 14 above and forward and aft flanges (the forward extends from scroll 13 and passes next to the blade of impeller 12, the aft is the right side of figure 1 extending from scroll 13 to shaft 15).



Claims 20 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Masutani in view of the applicants' admitted prior art (figure 2).

Regarding claim 20, the modified apparatus of Masutani discloses all of the claimed limitations as discussed in claim 14 above, but does not disclose the scroll vanes get progressively larger in the air flow path.

However, the applicants' admitted prior art (figure 2) discloses the scroll vanes get progressively larger, allowing for a larger passageway for the air.

Since both Masutani and applicant's admitted prior art are centrifugal compressors capable of supporting a load, the applicants' admitted prior art would be in the pertinent prior art of Masutani. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the teachings of the applicants' admitted prior art to make the scroll vanes progressively larger for the purpose of allowing for a larger passageway for air.

Regarding claim 22, Masutani discloses all of the claimed limitations as discussed in claim 20 above.

Claims 13 and 16 are rejected under 103(a) as anticipated by Masutani.

The modified apparatus of Masutani discloses each and every structural element of the compressor scroll and vanes in claim 14 above.

Masutani teaches that the compressor comprises scroll vanes integral with the scroll, but is silent as to the method of manufacturing. The claimed phrase "wherein said scroll housing is cast titanium" is being treated as a product by process limitation;

that is, that the scroll vanes are made by investment casting titanium. As set forth in MPEP 2113, product by process claims are NOT limited to the manipulations of the recited steps, only to the structure implied by the steps. Once a product appearing to be substantially the same or similar is found, a 35 USC 103 rejection may be made and the burden is shifted to applicant to show an unobvious difference. See MPEP 2113.

Thus, even though Masutani is silent as to the process used to mold the scroll and vanes, it appears that the product in Masutani would be the same or similar as that claimed; especially since both applicant's product and the prior art product are made with fixed scroll vanes.

Claim 19 is rejected under 103(a) as anticipated by Masutani.

The modified apparatus of Masutani discloses each and every structural element of the compressor scroll, vanes, forward flanges, aft flanges, forward engine flanges and aft engine flanges in claim 14.

Masutani teaches that the compressor comprises scroll vanes integral with the scroll, but is silent as to the process used to make the flanges. The claimed phrase "includes a machined surface" is being treated as a product by process limitation; that is, that the flanges are made by machining. As set forth in MPEP 2113, product by process claims are NOT limited to the manipulations of the recited steps, only to the structure implied by the steps. Once a product appearing to be substantially the same or similar is found, a 35 USC 103 rejection may be made and the burden is shifted to applicant to show an unobvious difference. See MPEP 2113.

Thus, even though Masutani is silent as to the process used to make the flanges, it appears that the product in Masutani would be the same or similar as that claimed; especially since both applicant's product and the prior art product are made by standard construction methods.

***Allowable Subject Matter***

Claims 25-28 are allowed.

Claims 31 and 32 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Devin Hanan whose telephone number is 571-272-6089. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Look can be reached on 571-272-4820. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Devin Hanan  
Patent Examiner  
Art Unit 3745

  
EDWARD K. LOOK  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 3700  
2/21/06